

Title: DSP-11 DUAL-SPECIFICITY PHOSPHATASE

Inventor(s): Ralf M. Luche and Bo Wei Express Mail No. EV336617291US Docket No. 200125.418C1

DSP-11, 450 base pairs

TGACCCGCTG TCCTGTGCCCTTCCCCAGGG ATGGGCCTGC AGCCCCCAA CTTCTCTGG GTGCTTCGG GCCGGCTGGC GGGACTGGCG  
CTGCCGCGGC TCCCCGCCA CTACCAGTTCTGTTGGACCTGGCGTGCAGCACCTGGTGCACCTGACGG AGCGCGGGCC CCCTCACAGC  
GACAGCTGCC CGGGCCTCAC CCTGCACCGC CTGGCATCC CGACTCTG CCCGCCGGCC CCCGACCAGA TCGACCGCTT CGTGCAGATC  
GTGGACGAGG CCAACGCACG GGGAGAGGCT GTGGGAGTGC ACTGTGCTCTGGCTTGCG CGCACTGGCA CCATGCTGGC CTGTTACCTG  
GTGAAGGAGC GGGGCTTGGC TGCAAGGAGAT GCCATTGCTG AAATCCGACG ACTACGACCC GGCTCCATCG AGACCTATGA GCAGGAGAAA  
GCAGTCTTCC AGTTCTACCA GCGAACGAAA TAAGGGCCT TAGTACCCCTT CTACCAAGGCC CTCACCCCCC TTCCCCATGT TGTCGATGGG  
GCCAGAGATG AAGGGAAGTG GACTAAAGTA TAAACCCCT TAGCTCCCAT TGGCTGAAGA CACTGAAGTA GCCCACCCCT GCAGGCAGGT  
CTTGATTGAA GGGGAGGCTT GTACTGCTTT GTGAATAAA TGAGTTTAC GAACCAAAAA AAAA AAAAAA

*Fig. 1*

DSP-11, 150 amino acids

MGVQPPNFSWLPGRLAGLALPRLPAHYQFLDLGVRHLVSLTERGPPHSSCPGLTLHRLRIPDFCPPAPDQIDRFVQIVDEANARGEAVGVHCALG  
FGRTGTMALCYLVKERGLAAGDAIAEIRRLRPGSIETYEQEKAVFQFYQRTK

*Fig. 2*

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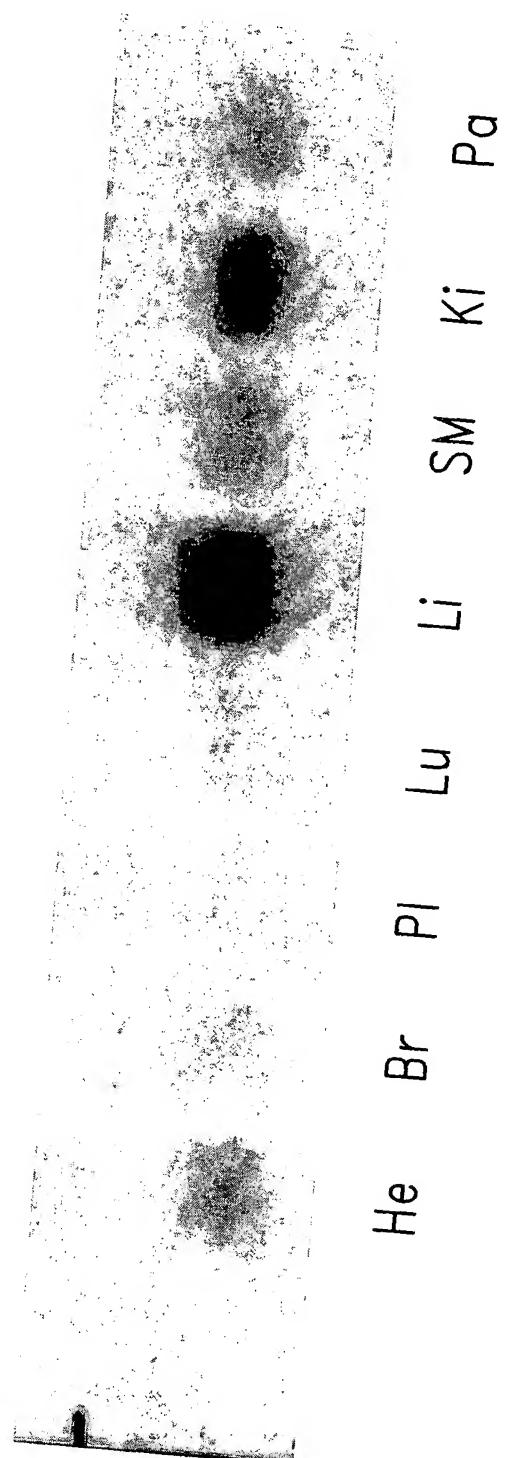
1 10 20 30 40 50 60 70 80 90 100  
 | +-----+ +-----+ +-----+ +-----+ +-----+ +-----+ |  
**PYST1** SLDLDRD-PNSATDSGSPLSNSQPSFPI-EILPFLYLGA--KDSTNLDVLEFGIKEYILNVTP-----NLPNLFENAGEFKYKQJPISDHWSQNLSS  
**MKP-7** DRELPSSATESDGSPPVSSOPAFPI-QILPFLYLGA--KDSTNLDVLGKYGKRYILNVTP-----NLPNAFERGEFTYKQJPISDHWSQNLSS  
**hVH5** GLCEGRPAALLPMSSLQCLPVPSVGLTRILPHLYLGSQ--KDLVNLKDLMTQNGISYVLNASH-----SCPPRP-DTICESRPRVRPINDNYCEKL  
**PAC1** PAQALPPAGAENSNSDPRPIYDQGGPVEILPFLYLGSQ--NHSSDLQGLQACGTIAVLNVA-----SCPNHFE--GLFHYSKSIPIVEDNQWVETS  
**MKP-1** PLSTSYPSDAESGCCSCTPLYDQGGPVEILPFLYLGSQ--YHASRKDMDALGITALINVA-----SCPNHFE--GHYQKSKSIPIVEDNHKADTS  
**MKP-4** PVPPSATEPLDLGCSSCGTPLHDQGGPVEILPFLYLGSQ--YHAARRDMDALGITALINVS-----DCPNHFE--GHYQKCTIPIVEDNHKADTS  
**MKP-5** SERALISQCGPKVWNNSYRPAYDQGGPVEILPFLYLGSQ--YHASKCEFALNLHTIALNVR-----RTSEACM--THLYKWTIPVEDSHTADTS  
**VHR** SGSFELSVDLNDLSDGSGCYSLPSQPCNEVPTRYWGA--SVAQDIPKLOQLGLITHWLNAAEGRSFHWNNTANFYKDSGJTYLGJKANDTQEFLNS  
**DSP-11** MGIVQPPNFSWLPGRLAGLAPRLPAHYQFLLDLGVRHVLSTE-----RGPHSDSCPGLTLHRLRIPD-FCPPAP  
**Consensus** e!1P 1y1G a \$ 1g! 1n p f y ipi D s

101 110 120 130 140 150 160 170 180 185  
 | +-----+ +-----+ +-----+ +-----+ +-----+ +-----+ |  
**PYST1** QFFPEAISFIDEA-RGKNCGVLVHCLAGTSRSVTVAIYLMQKLNLSMNDAYDIVKMKKSNIISPNNFNFGQLDFERTIGLSS  
**MKP-7** QFFPEAISFIDEA-RSKKKGVLVHCLAGTSRSVTVAIYLMQKLNLSMNDAYDIVKMKKSNIISPNNFNFGQLDFERTIGLSS  
**hVH5** PWLDKSTEFIDKA-KLSSCQVIVHCLAGTSRSATIAIAIAYTMKTMGHSSSDAYRFVKDRRPSISPNNFNFGQLDFERTIKLLA  
**PAC1** AMFQEATISFIISW-KNSGGRVLVHCCAGTSRSATTCIAYLQOSHRYRDEADFVKQRGGVISPNFSFMGOLLQLETQVLCCH  
**MKP-1** SWFNEAIDFTDSI-KVAGAGRFLVHCCAGTSRSATTCIAYLQOSHRYRDEAFFVKQRGGVISPNFSFMGOLLQFESQVLAHP  
**MKP-4** SHFMEATEYIDAY-KDCRGRLVHCCAGTSRSATTCIAYLQOSHRYRDEAFFVKQRGGVISPNFSFMGOLLQFESQVLAHTS  
**MKP-5** SHFQEADIDFTDCV -REKGSKVLVHCCAGTSRSATTCIAYLQOSHRYRDEAFFVKQRGGVISPNFSFMGOLLQFESQVLAHTS  
**VHR** AYFERAADIDQIAQKNGRVVHCCREGYRSRSPTICMAYLMTKQFRKLEAFDYIKQRSSMSVSPNFGFMGOLLQFESQVLAEG  
**DSP-11** DQIDRFLQIVDEA-NARGEAVGHCALGFRGRTMLACYLVKERGLAAGDAIEIRRLRPGSIETYEQEKAWFQFYQRTK  
**Consensus** f ai f!0 a V1VHC aGisrs T aY1n da !k r ispnf f gq1# e

*Fig. 3*

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Fig. 4

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>murine DSP-11 variant coding sequence

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atgggcgtcaacccccaacttctcctggtgcttcgggacggctggccggactggc  
gttgcggctgcccgcactaccaggctggaccagggtgtgcggcacctgg  
tgtccctgacggagcgcggacccctcacagtgcacagctgtcccgccctcacgctgcac  
cgaatgcgcattccctgactttgcccgcgtcccgaaacagatcgaccaatttgaa  
gatcgtggacggccaatgcccgggagaggctgtggagtgcactgtgccctaggct  
ttggccgactggcaccatgttagcctgtacttggtaaggagcgggcttggcgc  
ggagatgccattgtcgtgagatccggccgtgcgaccaggatccattgagacgtatgaaca  
ggagaaggccgtttccaggtttaccagcgaacaaatga
```

*Fig. 5*

>murine DSP-11 variant amino acid sequence

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MGVQPPNFSWLPGRLAGLALPRLPAHYQFLLDQGVRHLVSLTERGPPHSSCPGLTLH  
RMRIPDFCPPSPEQIDQFVKIVDEANARGEAVGVHCALGFGRGTMLACYLVKERALAP  
GDAIAEIRRLRPGSIETYEQEKAVFQFYQRTK*
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*Fig. 6*